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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,587	09/11/2003	Sung-Su Jung	041993-5219	4603
9629	7590	08/02/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			NGUYEN, SANG H	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-A

Office Action Summary

Application No.

10/659,587

Applicant(s)

JUNG ET AL.

Examiner

Sang Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 10, 13 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/11/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 09/11/03. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al (U.S. Patent No. 6,340,644) in view of Fujiwara et al (U.S. Patent No. 5,905,559).

Regarding claims 1 and 4 ; Becker et al discloses a dispensing device (7 of figure 1) of a distribution system (1 of figure 1), comprising:

a table (11 of figure 1) holding a wafer substrate (9 of figure 1) is considered to be a liquid crystal display panel;

a syringe (4 of figure 1) forming a seal pattern (col.2 lines 20-25 and 50-55 and col.4 lines 24-27) on the substrate (9 of figure 1) by varying a position of the table (11 of figure 1);

a display unit (8 of figure 1) for displaying an image of the seal pattern detected by the image camera (5 of figure 1).

The diagram illustrates a laser processing system. A laser source (7) is connected to a control unit (6) and a monitor (8). The laser beam (12) is directed through a series of mirrors and lenses (3, 4, 5) to a workpiece (2) mounted on a table (11). A guide rail (9) and a moving carriage (10) are also shown.

FIG. 1

Becker et al teaches all of features of claimed invention except for fabricating a liquid crystal display panel. However, Fujiwara et al teaches that it is known in the art to provide a device having a seal pattern members (8 , 8a, 8b, 8c of figure 1) for sealing and fabricating a liquid crystal display panel (1 of figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a seal dispenser of Becker et al with fabricating a liquid crystal display panel with seal

pattern as taught by Fujiwara et al for the purpose of aligning or sealing all of substrate with high speed and accuracy.

Further, the recitation that "fabricating a liquid crystal display panel" has not been given pattern weight because it has been held that a preamble is denied the effect of a limitation where the claim following the preamble is self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Regarding claims 2-3; Becker et al teaches all of features of claimed invention except for the substrate has at least one thin film transistor array substrate formed thereon and the substrate has at least one color filter substrate formed thereon. However, Fujiwara et al teaches that it is known in the art to provide the substrate has at least one thin film transistor array substrate (figures 3 and 19 and col.6 lines 30-36) and the substrate has at least one color filter substrate (3a of figure 3 and col.6 lines 27-30) formed thereon. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a seal dispenser of Becker et al with the substrate has at least one thin film transistor array substrate formed thereon and the substrate has at least one color filter substrate formed thereon as taught by Fujiwara et al for the purpose of improving quality of displayed images by junction unit.

Regarding claim 5; Becker et al teaches about at least one of the table and the syringe (4 of figure 1) is capable of moving horizontally plane XY (figure 1).

Regarding claim 9; Becker et al teaches all of features of claimed invention except for the seal pattern has a rectangular shape encompassing an outer edge of an

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image display region of the liquid crystal display panel. However, Fujiwara et al teaches that it is known in the art to provide the seal pattern members (8, 8a, 8b, 8c of figure 1) has a rectangular shape (figures 1-2, 4-7) encompassing an outer edge (1b of figures 2 and 5) of an image display region of the liquid crystal display panel (1 of figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a seal dispenser of Becker et al with the seal pattern has a rectangular shape encompassing an outer edge of an image display region of the liquid crystal display panel as taught by Fujiwara et al for the purpose of aligning or sealing all of substrate with high speed and accuracy.

Regarding claims 11-12; Becker et al teaches all of features of claimed invention except for the seal pattern is formed of an ultraviolet-hardening sealant and a thermo-hardening sealant. However, Fujiwara et al teaches that it is known in the art to provide the seal pattern is formed of an ultraviolet-hardening sealant and a thermo-hardening sealant (col.9 lines 14-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a seal dispenser of Becker et al with the seal pattern is formed of an ultraviolet-hardening sealant and a thermo-hardening sealant as taught by Fujiwara et al for the purpose of easily sealing all substrate with high speed and low cost.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al in view of Fujiwara et al as applied to claim 1 above, and further in view of Kitamura et al (U.S. Patent No. 6,139,639).

Regarding claims 6-7; Becker et al teaches all of features of claimed invention except for the table is capable of moving horizontally in forward/backward and left/right directions, wherein the table is driven with the same path as those for forming the seal pattern and detecting the image of the seal pattern. However, Kitamura et al teaches that it is known in the art to provide the table (6 of figure 2) is capable of moving horizontally in forward/backward and left/right directions (1-3 and 6-8), wherein the table (6 of figure 2 and abstract) is driven with the same path as the syringe (40 of figure 2) and the image camera (22 of figure 2) for forming and detecting the image of the seal pattern considered to be the coating pattern (D of figure 1) on the substrate (A of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a seal dispenser of Becker et al with the table is driven with the same path as those for forming the seal pattern and detecting the image of the seal pattern as taught by Becker et al for the purpose of aligning or sealing all of substrate with high speed and accuracy.

Regarding claim 8; Becker et al teaches all of features of claimed invention except for the seal pattern has an opening portion. However, Kitamura et al teaches that it is known in the art to provide the seal pattern considered to be the coating pattern (D

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of figure 1) on the glass substrate (A of figure 1) has an opening portion considered to be a defect (col.5 lines 29-35) on the seal pattern substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a seal dispenser of Becker et al with the seal pattern has an opening portion as taught by PAPI for the purpose of improving coating or seal on the substrate with high quality coated products.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art of Present Invention (figure 3) in view of Minami et al (U.S. Patent No. 6,776,845).

Regarding claim 14; Prior Art of Present Invention discloses a method for detecting a discontinuous portion of a seal pattern of a substrate (page 9 line 1 to page 10 line 17), comprising:

loading a substrate (300 of figure 3);

forming a seal pattern (316 of figure 3) on the substrate (300 of figure 3) by varying relative position between the substrate (300 of figure 3) and a syringe (301 of figure 3);

aligning a start point of the seal pattern (313 of figure 3). See figures 1-3.

PAPI discloses all of features of claimed invention except for an image camera for detecting an image of the seal pattern by changing the relative position between the image camera and the substrate, displaying the image of the seal pattern, and determining whether the seal pattern has a discontinuous portion by investigating the displayed image of the seal pattern. However, Minami et al teaches that it is known in

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the art to provide coating or sealing film forming method and system comprising an image camera (7 of figure 3) for detecting an image of the seal pattern considered to be coating pattern (Q of figure 6) by changing the relative position between the image camera (7 of figures 3) and the substrate (W of figure 3) , a display (5c of figure 3) for displaying the image of the seal pattern coating pattern (Q of figure 7) on the substrate (W of figure 7), and a control system (5 of figure 3) for determining whether the seal pattern considered to be coating pattern has a discontinuous portion (P of figure 6) by investigating the displayed image of the seal pattern (col.6 lines 35-57). See figures 1-11.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for detecting a discontinuous portion of a seal pattern of a substrate of PAPI with an image camera for detecting an image of the seal pattern by changing the relative position between the image camera and the substrate, displaying the image of the seal pattern, and determining whether the seal pattern has a discontinuous portion by investigating the displayed image of the seal pattern as taught by Minami et al for the purpose of detecting accurately the occurrence of uncoated or unsealed region on the substrate with high speed device. Further, the recitation that "a liquid crystal display panel" has not been given pattern weight because it has been held that a preamble is denied the effect of a limitation where the claim following the preamble is self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Regarding claim 15; PAPI discloses all of features of claimed invention except for the image of the seal pattern is enlarged for being displayed. However, Minami et al teaches that it is known in the art to provide the image of the seal pattern is enlarged for being displayed (figures 3 and 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for detecting a discontinuous portion of a seal pattern of a substrate of PAPI with the image of the seal pattern is enlarged for being displayed as taught by Minami et al for the purpose of easily detecting accuracy coating on the substrate.

Allowable Subject Matter

Claims 10, 13, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, taken alone or in combination, fails discloses or render obvious a seal dispenser for fabricating a liquid crystal display panel comprising all the specific elements with the specific combination including of the seal pattern having a first seal pattern formed at a dummy region of the substrate where an image display region is not formed and a second seal pattern connected to the first seal pattern and encompassing an outer edge of the image display region as set forth claim 10.

The prior art of record, taken alone or in combination, fails discloses or render obvious a seal dispenser and method for fabricating a liquid crystal display panel and detecting a discontinuous portion of seal pattern of a liquid crystal display panel comprising all the specific elements with the specific combination including of first

memory unit receiving and storing data for a further comprising: reference line width of the seal pattern, a second memory unit receiving and storing data for a measured line width of the seal pattern detected by the image camera; comparing unit comparing the data stored in the first and second memory units and outputting a control signal when an error exceeds a tolerance limit; and an alarm driving unit generating an alarm upon receiving the control signal of the comparing unit as set forth claims 13 and 16.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamabuchi et al (US 2004/0095526) discloses liquid crystal panel device and method; Matsumoto (US 2002/0089635) discloses a device for sealing a liquid crystal injection hole of a liquid crystal cell; Hashizume et al (2002/0062787) discloses apparatus for manufacturing bonded substrate; Lee (6844911) discloses seal pattern for liquid crystal display device; Takamori (6485782) discloses coating film forming method and apparatus; Zhang et al (6496240) discloses liquid crystal display apparatus contains image sensor; or Ishida et al (5932012) discloses paste applicator having positioning means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax

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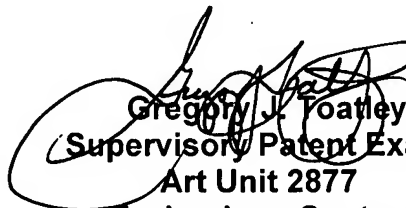
phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SN

Sang Nguyen/SN

July 27, 2005


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1 Aug 05